

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A disk drive comprising:  
a head which reads out data from a disk medium; and  
a read channel which decodes a data signal of concatenated turbo codes read out by the head and reproduces original data,  
wherein the read channel has:  
a detection unit which detects burst noise contained in the data signal; and  
an iterative decoding unit which executes iterative decoding processing including a posteriori probability decoding processing (APP decoding processing) to the data signal, the iterative decoding unit changing contents of likelihood calculation for carrying out the decoding calculation ~~according to the detection result~~ when the burst noise is detected by the detection unit, wherein a calculation term for calculating a channel value is erased from the likelihood calculation.
2. (Original) The disk drive according to claim 1, further comprising an error correction unit which executes error correction processing to data reproduced by the read channel, the error correction unit executing the error correction processing including erasure correction according to the detection result by the detection unit.
3. (Canceled)

4. (Original) The disk drive according to claim 1, wherein the iterative decoding unit executes the APP decoding processing of an inner code to the data signal of the concatenated turbo code using a recursive convolutional code as an outer code and includes: a first APP decoding unit which changes the contents of the likelihood calculation according to the detection result by the detection unit; and a second APP decoding unit which executes the APP decoding processing of the outer code.

5. (Canceled)

6. (Currently Amended) A read channel for decoding a data signal of a concatenated turbo code in a disk drive having a head reading out the data signal from a disk medium, comprising:

a detection unit which detects burst noise contained in the data signal read out by the head; and

an iterative decoding unit which executes iterative decoding processing including a posteriori probability decoding processing (APP decoding processing) to the data signal, the iterative decoding unit changing contents of likelihood calculation for carrying out the decoding calculation according to the detection result when the burst noise is detected by the detection unit, wherein a calculation term for calculating a channel value is erased from the likelihood calculation.

7. (Currently Amended) The read channel according to claim 6, further comprising: an A/D converter which converts the data signal read out by the head into a digital signal and an equalizer which executes waveform equalizing processing by a partial response method to the digital signal, wherein

the detection unit detects the burst noise on the basis of an amplitude value of the digital signal outputted from the A/D converter, and

the iterative decoding unit executes iterative decoding processing to the data signal outputted from the equalizer, the channel value being an output of the equalizer.

8. (Canceled)

9. (Original) The read channel according to claim 6, wherein the iterative decoding unit executes the APP decoding processing of an inner code to the data signal of the concatenated turbo code using a recursive convolutional code as an outer code and includes: a first APP decoding unit which changes the contents of the likelihood calculation according to the detection result by the detection unit and a second APP decoding unit which executes the APP decoding processing of the outer code.

10.-11. (Canceled)

12. (Currently Amended) A method of decoding a data signal of a concatenated turbo code in a disk drive having a head reading out the data signal from a disk medium, comprising:

detecting burst noise contained in the data signal read out by the head; and

when iterative decoding including a posteriori probability decoding processing (APP decoding processing) is executed to the data signal, changing contents of likelihood calculation for carrying out calculation of the iterative decoding ~~according to the detection result~~ when the burst noise is detected by the detecting, wherein a calculation term for calculating a channel value is erased from the likelihood calculation.

13. (Original) A method according to claim 12, wherein the iterative decoding includes, when the APP decoding of an inner code is executed to the data signal of the concatenated turbo code using a recursive convolutional code as an outer code, first APP decoding for changing the contents of the likelihood calculation according to the detection result by the detecting and second APP decoding for executing the APP decoding processing of the outer code.

14.-15. (Canceled)